

WHAT IS CLAIMED IS:

1. An apparatus for buffering packet data sent from a first node to a second node within a computer network, the apparatus comprising:

a first device having a buffer and at least a first processor; and

a second device having at least a second processor, wherein the first device is a physically separate device from the second device,

wherein the second processor of the second device is configured to manage the buffer of the first device and the first processor is also configured to analyze packet data accessed from the buffer.

2. An apparatus as recited in claim 1, wherein the second processor of the second device is further configured to analyze portions of the packet data accessed from the buffer of the first device.

3. An apparatus as recited in claim 2, wherein the second processor of the second device manages the buffer of the first device by causing data fragments of a datagram to be stored in the buffer in an order that was used to send such data fragments.

4. An apparatus as recited in claim 2, wherein the second processor of the second device manages the buffer of the first device by causing data frames of packet data to be stored in the buffer in an order that was used to send such data frames.

5. An apparatus as recited in claim 1, wherein the second processor of the second device manages the buffer of the first device by causing packet data to be stored in the buffer until the first processor is ready to analyze such packet data.

6. An apparatus as recited in claim 1, wherein the second processor of the second device manages the buffer of the first device by causing packet data to be read from the buffer when the first processor is ready to analyze such packet data.

7. An apparatus as recited in claim 1, wherein the second processor of the second device manages the buffer of the first device by causing packet data to be stored in the buffer until a decision has been reached as to such packet data's destination.

8. An apparatus as recited in claim 1, wherein the second processor of the second device manages the buffer of the first device by causing packet data to be read from the buffer when a decision has been reached as to such packet data's destination.

9. An apparatus as recited in claim 1, wherein the second processor of the second device manages the buffer of the first device by tracking a plurality of buffer addresses of packet data written into the buffer.

10. An apparatus as recited in claim 9, wherein the second processor of the second device manages the buffer of the first device by instructing the first processor of the first device to read and analyze packet data from a particular buffer address of the buffer.

11. An apparatus as recited in claim 1, wherein the first processor is configured to analyze frames of packet data stored within the buffer, but the second processor is not configured to analyze frames of packet data stored within the buffer.

12. An apparatus for analyzing packet data sent from a first node to a second node within a computer network, the apparatus comprising:

a buffer module associated with a buffer, wherein buffer module includes a receive module for receiving packet data and writing it to the buffer and a transmit module for transmitting packet data from the buffer; and

a manager module for receiving packet data, the manager being configured to send
5 commands to the buffer module indicating that received packet data is to be stored within the buffer at locations specified by the manager module and specifying data portions that are to be transmitted from the buffer to a selected destination.

13. An apparatus as recited in claim 12, wherein the buffer module further includes an analyze module for analyzing packet data read from the buffer and wherein one
10 or more of the commands sent by the manager to the buffer module specify which packet data from the buffer is to be read from the buffer and analyzed by the analyze module.

14. An apparatus as recited in claim 13, wherein the manager module is further to analyze headers of received packet data to thereby reduce errors in received packet data and order received packet data before or while it is stored within the buffer.

15. An apparatus as recited in claim 14, wherein the commands sent by the
15 manager to the buffer module include at least a receive command for instructing the receive module of the buffer module to write specific packet data to the buffer, at least a transmit command for instructing the transmit module of the buffer module to transmit specific packet data, and at least an analyze command for instructing the analyze module of the
20 buffer module to analyze specific packet data.

16. An apparatus as recited in claim 15, wherein the receive command includes packet data and a buffer address.

17. An apparatus as recited in claim 16, wherein the receive command also includes a packet data length.

18. An apparatus as recited in claim 15, wherein the transmit command includes a buffer address.

5 19. An apparatus as recited in claim 18, wherein the transmit command includes a packet data length and encapsulation data.

20. An apparatus as recited in claim 15, wherein the analyze command includes a buffer address specifying a start of the data portion to be analyzed by the analyze module of the buffer module and a session type specifying a protocol associated with the data portion to be analyzed by the analyze module.
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21. An apparatus as recited in claim 20, wherein the analyze command also includes a data portion length specifying a length of the data portion to be analyzed by the analyze module, a session identifier, and a first_of_session identifier that indicates whether the packet data at the buffer address is data from a beginning of a session.

15 22. An apparatus as recited in claim 20, wherein the analyze module of the buffer module is further configured to analyze the specified data portion based on at least the session type.

23. An apparatus as recited in claim 21, wherein the analyze module of the buffer module is further configured to analyze the specified data portion based on at least the session type, session identifier and the first_of_session identifier.
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24. An apparatus as recited in claim 23, wherein the analyze module of the buffer module is further configured to indicate to the manager module when analysis of the specified data portion is complete.

25. An apparatus as recited in claim 24, wherein the analyze module of the buffer module is further configured to indicate to the manager module when analysis of the specified data portion is complete, such indication being in response to a query from the manager module.

26. An apparatus as recited in claim 12, wherein the transmit module of the buffer module is further configured to indicate to the manager module when transmission of a specified data portion is complete.

27. An apparatus as recited in claim 26, wherein the analyze module of the buffer module is further configured to indicate to the manager module when analysis of the specified data portion is complete, such indication being in response to a query from the manager module.

28. An apparatus analyzing packet data sent from a first node to a second node within a computer network, the apparatus comprising:

first means for receiving packet data and sending at least a receive command indicating a buffer location for writing the received packet data within a buffer;

second means for receiving the receive command and received packet data and writing the packet data to the buffer based at least on the receive command;

wherein the first means is also configured for sending at least a transmit command indicating that a specified data portion is to be transmitted from the buffer; and

wherein the second means is also configured for receiving the transmit command and in response to such transmit command, transmitting the specified data portion from the buffer.

29. A method of analyzing packet data sent from a first node to a second node within a computer network, the method comprising:

in a first module, receiving packet data and sending at least a receive command indicating a buffer location for writing the received packet data within a buffer associated with a second module;

in the second module, receiving the receive command and received packet data and writing the packet data to the buffer based at least on the receive command;

in the first module, sending at least a transmit command indicating that a specified data portion is to be transmitted from the buffer; and

in the second module, receiving the transmit command and in response to such transmit command, transmitting the specified data portion from the buffer.

30. A computer program product for analyzing packet data sent from a first node to a second node within a computer network, the computer program product comprising:

at least one computer readable medium;

computer program instructions stored within the at least one computer readable product configured to cause a processing device to:

receive packet data in a first module and send at least a receive command indicating a buffer location for writing the received packet data within a buffer associated with a second module;

receive the receive command and received packet data in the second module, and write the packet data to the buffer based at least on the receive command;

send at least a transmit command from the first module indicating that a specified data portion is to be transmitted from the buffer; and

5 receive the transmit command in the first module and in response to such transmit command, transmit the specified data portion from the buffer.